

Chapter 7 CRT Questions

1. Which members of the circle class are encapsulated?

The encapsulated members of the circle class are radius and PI (the private attributes).

2. What name must the constructor of a class have?

The name of the constructor must be the same as the class name.

3. Explain the difference between the private and public access modifiers.

Public access modifier: When something is declared as public, it is accessible from all classes.

Private access modifier: When something is declared as private, it's only accessible in the same class. Other classes won't have access.

4. Consider the following code. Is the last statement valid or invalid? Explain.

```
Circle dot = new Circle(2);  
dot.radius =5;
```

The last statement is invalid if radius is declared as private.
This is because private attributes cannot be accessed in a different class.
If radius is declared as public, then it is valid.

5. Use the following class to answer the questions below:

```
public class Roo {  
  
    private int x;  
  
    public Roo {  
        x=1;  
    }  
  
    public void setX(int z) {  
        x=z;
```

```

    }

    public int getX() {
        return(x);
    }

    public int calculate() {
        x=x*factor();
        return(x);
    }

    private int factor() {
        return(0.12);
    }
}

```

a) What is the name of the class?

The name of the class is Roo.

b) What is the name of the data member?

The name of the data member is x.

c) List the accessor method.

getX()

d) List the modifier method.

setX(int z)

e) List the helper method.

factor()

f) What is the name of the constructor?

Roo

g) How many method members are there?

There are 4 method members.

6. What is the difference between a class and an object?

Class: A class defines methods and attributes.

Object: An object is an instance of a class, having specific values and functionality.

9. Use the following class data member definitions to answer the questions below:

```
public class Moo {  
    private double y;  
    private static int x;  
    private static final z;  
    ...  
}
```

a) Which data member is a constant?

Since z is declared using “static final,” it is a constant. Its value can't be changed after it has been assigned.

b) Which data members are variables?

x and y are the two variables.

c) Which data member(s) are instance members?

Since y is not declared as static and is associated with class objects, it's an instance member.

d) Which data member(s) are class members?

x and z are the two class members. This is because they are static, and belong to the class and not individual objects.